

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

The following components have been identified as being located within the boundaries of the Water Preserve Areas. The component descriptions for the 2010 Recommended Plan have been modified from D13R (recommended plan for the C&SF Comprehensive Review Study) and from Other Project Elements (OPEs). These components have been outlined in the component descriptions in a very conceptual way. Some additional level of incidental design has been expended on several of the components in order to allow them to be included in the subregional models. It is noted all components described are recommended in the WPA Feasibility Study.

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Strazzulla Wetlands - (OPE) (Same PSP & TSP)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Strazzulla Wetlands - SEE WPA COMPONENT MAP 2

Purpose: Provide a hydrological and ecological connection to the Loxahatchee National Wildlife Refuge and expand the spatial extent of protected natural areas.

Intent: The additional lands to be purchased combined with the lands acquired are acting as a buffer between higher water stages to the west and lands to the east that must be drained. This increase in spatial extent provides vital habitat connectivity for species that require large unfragmented tracts of land for survival. It also contains the only remaining cypress habitat in the eastern Everglades and is one of the few remaining sawgrass marshes located adjacent to the coastal ridge. This area provides an essential Everglades landscape heterogeneity function.

Design and operation details:

- 1) A three to five foot high berm (five foot high along the southern end) is constructed along the northern and eastern boundaries of the property to reduce runoff, losses to the east, and allow deeper water depths.
- 2) A 300 cfs control structure in Lake Worth Drainage District (LWDD) L-23W canal consists of gated culverts. The structure controls the LWDD L-23W canal at the same elevation as the L-40 borrow canal when it is greater than elevation 15.8 feet NGVD. When L-40 is less than elevation 15.8 feet NGVD, the structure is operated to control L-23W at the same elevation as the LWDD canal system.
- 3) LWDD 9S canal will be relocated along the eastern perimeter of the wetlands from 116th Terrace South to reconnect to the L-23W canal.
- 4) This feature also includes the acquisition of approximately 3335 acres of land adjacent to WCA 1 including the Strazzulla Tract.

Location: East of WCA 1 in central Palm Beach County

Counties: Palm Beach

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Assumptions and related considerations:

- 1) Water supply deliveries to LWDD via L-23W canal are not interrupted by the operation of the proposed control structure.
- 2) This feature also includes the acquisition of approximately 3335 acres of land adjacent to WCA 1 including the Strazzulla Tract.
- 3) Telemetry systems are required for all operable structures.

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Component M (Same as PSP without ASR)

Geographic Region: Water Preserve Area - Palm Beach County

Component Title: Hillsboro Impoundment (Site 1) – SEE WPA COMPONENT MAP 3

Purpose: Water supply storage impoundment to supplement water deliveries to the Hillsboro Canal during the dry season. The deliveries will be used to prevent saltwater intrusion, provide wellfield recharge and environmental deliveries to isolated wetlands. The storage area will reduce seepage from the adjacent natural areas, improve water quality and provide some measure of flood protection.

Operation: The impoundment fills during the wet season from excess water backpumped from the Hillsboro Canal. Water releases are made back to the Hillsboro Canal to help maintain canal stages during the dry season. If water is not available in the impoundment, existing operating rules for water delivery to this region apply.

The impoundment is compartmentalized into two cells, located north of the Hillsboro Canal. The total acreage of the impoundment is 1660 acres. North Springs Improvement District (NSID) discharges are redirected north to the impoundment via the L-36 borrow canal and the proposed inflow pump station.

Detailed design and operation:

- 1) 1660-acre impoundment is divided into two compartments, located north of the Hillsboro Canal. The western compartment is 836 acres in size. The eastern compartment is 824 acres in size. Each compartment has a maximum water depth of 8 feet. An internal levee separates the two compartments. Transfer of flow between the compartments is accomplished by a set of gated culverts.
- 2) Inflow: The inflow pump station in the Hillsboro Canal provides the total inflow rate of 1500 cfs.
- 3) Discharge: A 700 cfs outflow structure is located in the western compartment and discharges to the Hillsboro Canal. This structure consists of three gated culverts, each 4-feet in diameter and 70 feet long.
- 4) There are two operational scenarios.
 - (1) On-peak operations: The impoundment fills during the wet season with excess water backpumped from the Hillsboro Canal and NSID via the L-36 borrow canal. A 1500 cfs inflow pump station in the Hillsboro Canal turns on when the stage in the Hillsboro Canal reaches elevation 7.3 feet NGVD and turns off when the canal stage drops to elevation 7.0 feet NGVD. The pump also turns off when the stage in the impoundment north of the Hillsboro Canal reaches elevation 19.0 feet NGVD (8 feet deep).
- 5) Off-peak operations: A 700 cfs outflow structure is located in the western compartment and discharges to the Hillsboro Canal. The structure discharges

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

when the Hillsboro Canal stage drops below elevation 7.0 feet NGVD and stops discharging when the canal reaches elevation 7.5 feet NGVD. Demands on Hillsboro Canal are met first, then the water stored in the impoundment is used to meet the following prioritized demands: LWDD, C-14, C-13 and North New River. Operational flexibility for the component is provided by interconnecting the compartments by culverts. Two structures, each containing two, 72" diameter CMP culverts, interconnect the western and eastern compartments. These interconnects allow water to be transferred between compartments.

- 6) A 500 cfs emergency overflow spillway is designed as a lower section of the levee to maintain levee integrity. The spillway invert elevation is 1 foot above the maximum normal operating elevation of the impoundment and discharges into the Hillsboro Canal.
- 7) The conveyance of Hillsboro Canal is increased by deepening the cross section from the inflow structure at the impoundment eastward to LWDD E-1 canal. This will enable additional flows from the western Hillsboro Canal basin to be backpumped into the impoundment.
- 8) A canal running along the east side of the impoundment (north of the Hillsboro Canal) collects seepage where it is directed south to the Hillsboro Canal through a gated culvert (100-cfs capacity).

Location: The Water Preserve Area Land Suitability Analysis previously identified 1660-acre site, north of the Hillsboro Canal and southeast of WCA-1.

Counties: Palm Beach

Assumptions and related considerations:

- 1) Telemetry systems are required for all operable structures and pump stations.

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Component YY

Geographic Region: Water Conservation Area -Water Preserve Area -
Component Title: Divert WCA 2 flows to Central Lake Belt Storage - SEE WPA
COMPONENT MAPS 4, 5 and 6

Purpose: Capture excess water in Water Conservation Area (WCA) 2B to reduce stages above desired target levels in WCA 2B and to divert water through the improved L-37 and L-33 borrow canals to Northeast Shark River Slough (NESRS) to meet targets.

Operation: Surface water in WCA 2B above target levels overflows through three structures along L-35 and L-35A to the North New River Canal. It is pumped to the L-37 borrow canal. The L-37 and L-33 borrow canals are improved to accept this additional flow along with the seepage collected from WCA 3.

Design and operation detail:

- 1) 1500 cfs pump station to divert overflow to the L-37 borrow canal. Pump on when water levels in WCA 2B are 1.25 feet above target and pump off when water levels in WCA 2B drop below 1.0 foot above target.
- 2) Culvert with 1500 cfs capacity to pass flows above targets in WCA 2B from the L-38 east borrow canal to the L-37 borrow canal.
- 3) Improve conveyance of L-37 and L-33 borrow canals to 2000 cfs to handle WCA 2B flows plus seepage from WCA 3.
- 4) Remove S-9XN and S-9XS.

Location L-37 and L-33 borrow canal improvements are located east of the protective levees and 0.5 mile west of US Highway 27 between the North New River Canal and the Miami Canal.

Counties: Broward

Assumptions and related considerations:

- 1) Telemetry systems are required for all operable structures and pump stations.

-Draft-
Water Preserve Area Feasibility Study – 2010 Recommended Plan

Component O

Geographic Region: Water Preserve Area - Broward County

Component Title: Water Conservation Area (WCA) 3A and 3B Levee Seepage Management – SEE WPA COMPONENT MAPS 5 and 6

Purpose: Reduce seepage from WCA 3A and 3B to improve hydropatterns within the WCAs by allowing higher water levels in the borrow canals and maintaining longer inundated duration within the marsh areas that are located east of the WCAs and west of US Highway 27. Seepage from the WCAs and marshes is collected and directed south into the Central Lake Belt Storage Area. This maintains flood protection and the separation of seepage water from urban runoff originating in the Western C-11 basin and Lake Okeechobee water supply deliveries.

Operations: The L-37 and L-33 borrow canals are held at higher stages as part of the WCA 3A and 3B seepage management system. The canals are also used to convey flows as part of the WCA 2B diversion flow system (Component YY). Seepage and canal flows collected in the L-37 and L-33 borrow canals are directed south to the Northeast Shark River Slough (NESRS) to meet its demands; or returned to WCA 3A through the proposed critical project pump S-9A.

Design and operation detail:

- 1) New levees are constructed west of US Highway 27 from the North New River Canal to the Miami (C-6) Canal. This provides a separation of seepage water from the urban runoff.
- 2) The northern Everglades Buffer Strip, that runs parallel to the L-37 borrow canal, is controlled via a gated spillway at an elevation of 7.5 feet NGVD, wet season and 6.5 feet NGVD, dry season. A new 50 cfs gravity control structure directs water which can pond in the buffer strip near the C-11 Canal into the L-37 borrow canal just east of the S-9 pump station. The discharge into the C-11 Canal is diverted or returned to WCA 3A by the S-9A pump station (critical project).
- 3) The southern Everglades Buffer Strip, that runs parallel to the L-33 borrow canal, is controlled via a gated spillway at an elevation of 6.5 feet NGVD, wet season and 5.5 feet NGVD, dry season.
- 4) A divide structure is added in the C-11 Canal, east of US Highway 27 to maintain a headwater stage to reduce/control seepage from WCA 3A and to separate seepage water from urban runoff (C-11 Critical Project). Seepage water west of the divide structure is backpumped into WCA 3A by the new critical project pump station S-9A. Water from the C-11 west basin, east of the divide structure, is backpumped into the C-11 STA/Impoundment and C-9 STA/Impoundment as storage availability exists in either facility.

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Location: Seepage collected in borrow canals along the existing eastern protective levees adjacent to WCA 3. The divide structure is located in the C-11 Canal east of US Highway 27.

Counties: Broward

Assumptions and related considerations:

- 1) The seepage from the Water Conservation Areas meets the water quality standards necessary to achieve ecosystem restoration.
- 2) Telemetry systems are required for all operable structures and pump stations.

-Draft-
Water Preserve Area Feasibility Study – 2010 Recommended Plan

Component Q

Geographic Region: Water Preserve Area - Broward County

Component Title: C-11 Impoundment - SEE WPA COMPONENT MAP 5

Purpose: Divert untreated runoff from the western C-11 basin that is presently discharged into Water Conservation Area (WCA) 3A into the C-11 Stormwater Treatment Area (STA) / Impoundment prior to sending it south to the C-9 Impoundment.

Operation: Runoff in the western C-11 basin that was previously backpumped into Water Conservation Area 3A is diverted into the C-11 STA/Impoundment. If storage is not available in the C-11 Impoundment then runoff is sent to the C-9 Impoundment if storage capacity is available. If storage capacity is not available in either of the impoundments and the C-9 Canal stages are not favorable to send excess to tide then the S-9 pump station is used to provide flood protection for the western C-11 basin and runoff is pumped into WCA 3A. If the C-9 Impoundment is full and the C-9 Canal elevations are favorable, then excess runoff can be sent to tide via the C-9 Canal. The S-9 seepage divide structure (S-381) is operated to reduce groundwater elevation fluctuations and reduce seepage in the western C-11 Canal.

Design and operation details:

- 1) Impoundment/STA: 1730 acres divided into two compartments. The northern compartment is 209 acres in size with a maximum water depth of 2 feet. The 2-foot maximum water depth for this compartment is proposed to accommodate the relocation and consolidation of the mitigation areas for Arvida II, Arvida III and the City of Weston. The intent is to manage the northern compartment in such a way as to provide the wetland mitigation function. The southern compartment is 1507 acres in size with a maximum water depth of 4 feet. A perimeter levee surrounds the impoundment with a 7-foot high internal levee separating the two compartments. Transfer of flow between compartments is accomplished by 2 sets of gated culverts each consisting of two, 60-foot long, 72-inch diameter culverts. The buffer marsh/wetland enhancement area located north of the proposed impoundment will be used to mitigate seepage from the impoundment and provide a buffer between the impoundment and urban development.
- 2) Canal improvements: 2500 cfs diversion canal replaces the borrow canal located west of US Highway 27 between the C-11 and C-9 canals. Conveyance capacity improvements for the C-9 Canal are required between S-30 and the inflow structure into for the C-9 Impoundment.
- 3) Inflows: A 2500 cfs capacity inflow pump in the C-11 Canal directs runoff into the C-11 STA/Impoundment. For dry season operation, the pump turns on at elevation 4.0 feet NGVD and turns off at elevation 3.7 feet NGVD or when the impoundment reaches 4 feet of depth. The wet season pump on elevation is

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

3.9 feet NGVD and off elevation is 3.5 feet NGVD or when the impoundment reaches 4 feet of depth.

- 4) Discharges: A 2500 cfs structure discharges from the impoundment into the improved, US Highway 27 west borrow canal when stages reach 4.0 feet NGVD. The northern 2-foot area discharges at a rate up to 100 cfs into the eastern seepage canal.
- 5) There are two operational scenarios.
 - (1) On-peak operations: Stormwater runoff that is currently backpumped into WCA 3A in the western C-11 basin is diverted into the C-11 STA/Impoundment until full, then sent to the C-9 STA/Impoundment until full. If storage capacity is not available in the C-11 STA/Impoundment, or C-9 STA/Impoundment and stages in the C-9 Canal are not favorable to send excess to tide, then the S-9 pump station is used to provide flood protection for the western C-11 basin and runoff is pumped into WCA 3A.
 - (2) Off-peak operations: Water is supplied from the impoundment to maintain the western C-11 Canal and recharge south Broward County wellfields to improve groundwater elevations in the eastern C-11 basin during dry seasons. Seepage is collected and returned to the impoundment via a seepage collection system located on the north and west boundaries of the impoundment. Seepage east of the impoundment is controlled by the expansion of the eastern seepage canal which is directly connected to the C-11 Canal.
- 7) An emergency overflow spillway is designed as a lower section of the levee to maintain impoundment levee integrity. The emergency overflow spillway invert elevation is 1 foot above the maximum normal operating elevation. The spillway discharges into the C-11 Canal west of the divide structure.

Location: The diversion canal is located west of US Highway 27 between the C-11 and the C-9 Canals. The C-11 STA/Impoundment is located northeast of the intersection of US Highway 27 and C-11 Canal.

Counties: Broward, Miami-Dade

Assumptions and related considerations:

- 1) Flood protection component for FPL the Holly Lake mobile home park may be needed. A 60 cfs pump with an on elevation of 6.0 feet NGVD and an off elevation of 5.0 feet NGVD is proposed.
- 2) Telemetry systems are required for all operable structures and pump stations.

Interim Operations: Initially the C-11 STA/Impoundment is operated as an impoundment. This operation continues until the NLBSA is functional.

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

_Component R

Geographic Region: Water Preserve Area - Broward County

Component Title: C-9 Stormwater Treatment Area (STA)/Impoundment - SEE
WPA COMPONENT MAP 6

Interim Purpose: C-9 Basin runoff is backpumped from the western C-9 basin and the western C-11 Canal into the impoundment. The C-9 STA/Impoundment provides storage of urban runoff, groundwater recharge within the basin and seepage control of WCA 3 and buffer areas located west of the impoundment.

Interim Operation: Excess water from the C-11 and C-9 basins is distributed to the C-9 Impoundment when there is available storage. In the dry season, water supply deliveries are provided to the C-9, C-6/C-7 and C-2/C-4 canals and to Biscayne Bay. Seepage from the C-9 STA/Impoundment may be collected and returned to the impoundment.

Design and operation detail:

- 1) Impoundment/STA: 1739 acres with a maximum water depth of 4 feet. A levee surrounds the impoundment.
- 2) Inflow structure: 1000 cfs pump in the C-9 Canal directs runoff into the C-9 Impoundment. Pump on at elevation 3.2 ft NGVD and off at elevation 2.8 NGVD or when the impoundment reaches a 4-foot maximum depth.
- 3) Outflow structure: Gravity structure with 1000 cfs capacity discharges to the C-9 Canal for water supply deliveries to the C-6/C-7, C-2/C-4 canals and Biscayne Bay.
- 4) There are two operational scenarios:
 - (1) On-peak operations: Flows from the western C-11 and C-9 basins are distributed to C-9 STA/Impoundment when storage is available. The intent is to maximize the amount of water sent to the impoundment for storage.
 - (2) Off-peak operations: Water supply deliveries from the impoundment are provided to the C-9, C-6/C-7, C-2/C-4 canals and to Biscayne Bay.
- 5) Seepage Collection: Seepage canals are located on the north, east and west boundaries of the STA/impoundment. Three, 100-cfs pumps are used to direct seepage back into the 4 foot deep impoundment area. The seepage collection canal system is maintained between elevations 2.5 and 3.0 feet NGVD for the east, 4.5 and 5.0 feet NGVD for the west and 4.0 and 4.3 feet NGVD for the north.
- 6) An emergency overflow spillway is designed as a lower section of the levee to maintain impoundment levee integrity. The emergency overflow spillway invert elevation is 1 foot above the maximum normal operating elevation. The spillway will discharge into the C-9 Canal.

Location: Site identified by Water Preserve Area Land Suitability Analysis, east of US Highway 27 and north of the C-9 Canal.

Counties: Broward

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Assumptions and related considerations:

- 1) Additional treatment facility needed if stored water is backpumped into Water Conservation Area 3.
- 2) Telemetry systems are required for all operable structures and pump stations.

Interim Operations: Initially the C-9 STA/Impoundment is operated as an impoundment. This operation continues until the NLBSA is functional

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Component SS

Geographic Region: Everglades Agricultural Area (EAA), Water Preserve Area, and Broward and Miami-Dade counties

Component Title: North New River Improvements (Phase 1)– SEE WPA COMPONENT MAP 4

Purpose: Reroute water supply deliveries made to Miami-Dade County from the Miami and Tamiami Canals and Water Conservation Area (WCA) 3 to the North New River Canal due to the backfilling of the Miami Canal as part of the decompartmentalization of WCA 3.

Operation: Send water supply deliveries from Lake Okeechobee to Miami-Dade County southeast through the North New River Canal in the Everglades Agricultural Area (EAA) (L-20, L-19, L-18 borrow canals) to S-150. From the S-150 send deliveries into L-38W borrow canal and at the southern terminus of the borrow canal deliveries continue south through a 1500 cfs pump to the borrow canal along the west side of US Highway 27.

Design and operation detail:

- 1) Construct an inverted siphon with 1500 cfs capacity to pass water supply deliveries from the L-38 west borrow canal to the US Highway 27 west borrow canal. This maintains the separation of Lake Okeechobee water supply deliveries and WCA 2 seepage and overflow water.
- 2) Improve conveyance in the borrow canal on the west side of US Highway 27 between L-38W and the Miami Canal as necessary to pass the additional flows.

Location: EAA and Water Conservation Area 3.

Counties: Palm Beach, Broward, and Miami-Dade

Assumptions and related considerations:

- 1) Once the Miami Canal is filled, operational flexibility is reduced since there is only one delivery route to Miami-Dade County (back-up routes have been eliminated).
- 2) Telemetry systems are required for all operable structures and pump stations.

-Draft-

Water Preserve Area Feasibility Study – 2010 Recommended Plan

Component XX

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: North Lake Belt Storage Area (NLBSA) - Turnpike Conveyance Only

This feature is part of Component BB, Dade-Broward Levee and Canal.

-Draft-
Water Preserve Area Feasibility Study – Tentative Selected Plan

Component ZZ

Geographic Region: Water Conservation Area -Water Preserve Area -

Component Title: Divert Water Conservation Area 3 flows to Central Lake Belt Storage Area – SEE WPA COMPONENT MAP 7

Purpose: Capture excess water in Water Conservation Area (WCA) 3A and 3B to reduce stages above targets in WCA 3 and to divert it through modified structures at S-9 and S-31 to NESRS via the L-37 and L-33 borrow canals.

Operation: When surface water in WCA 3B exceeds target depths by 0.1 feet, water is diverted to NESRS if needed via the L-33 borrow canal. When surface water in WCA 3A near S-9 exceeds target depths by 1.0 foot, water is diverted to the NESRS if needed via the L-37 borrow canal.

Design and operation detail:

- 1) Outflow structures: A new 500 cfs structure located at the S-9 is constructed. It operates at 2.0 feet of head to deliver flows from WCA 3A to the L-37 borrow canal.

Location: The eastern levees of WCA 3.

Counties: Broward and Miami-Dade

Assumptions and related considerations:

- 1) Telemetry systems are required for all operable structures and pump stations.

-Draft-
Water Preserve Area Feasibility Study – Tentative Selected Plan

Component S

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: Central Lake Belt Storage Area (CLBSA)– L-30 borrow canal upgrade ONLY

Purpose: In-ground reservoir to receive excess water from Water Conservation Areas (WCA) 2B, 3A and 3B. The in-ground reservoir, with perimeter seepage barrier, allows storage of large quantities of water without groundwater seepage losses in this highly transmissive region. The water stored in CLBSA is provided to 1) Northeast Shark River Slough (NESRS), 2) WCA 3B and 3) Biscayne Bay when available.

Design: L-30 borrow canal upgrade includes canal conveyance improvement to 800 cfs.

Operation: The improved L-30 borrow canal will be used to convey regional natural system deliveries to NESRS.

-Draft-
Water Preserve Area Feasibility Study – Tentative Selected Plan

Component BB

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Dade-Broward Levee and Canal - SEE WPA COMPONENT MAP 7

Purpose: Reduce seepage to the east from the Pennsuco wetlands and southern Water Conservation Area (WCA) 3B and enhance hydroperiods in the Pennsuco. Also, an improved Dade Broward Levee enhances recharge to Miami-Dade County's Northwest Wellfield.

Operation: Improvements to the Dade-Broward Levee and associated conveyance system reduces seepage losses to the east and provide recharge to Miami-Dade County's Northwest Wellfield. Seepage reduction enhances hydroperiods in Pennsuco wetlands and hold stages higher along southeastern WCA 3B. Recharging the conveyance features of the Dade-Broward levee from the regional system deliveries provides recharge to Miami-Dade County's Northwest Wellfield.

Design and operation detail:

- 1) Improve the Dade-Broward Levee: Construct or improve the existing levee to a five-foot height with a twelve-foot top width and an east borrow canal with 14 feet depth, 110-foot bottom width, 1 to 1 (vertical to horizontal) side slopes, and improve existing conveyance to 1400 cfs.
- 2) 600 cfs divide structure in the C-6 Canal for regional system deliveries to C-6, C-7, C-4, and C-2 canals and the South Dade Conveyance System (SDCS). This structure controls the C-6 Canal water levels so that deliveries are directed to the Dade-Broward Levee Canal or are released to the canals above.
- 3) 1400 cfs bypass structure and proposed canal from the C-6 Canal to the Dade-Broward Levee Canal to allow Lake Okeechobee deliveries south to provide recharge from the regional system via the improved US Highway 27 west canal.
- 4) 1400 cfs gravity structure in the Dade-Broward Levee borrow canal located on the northern levee of the C-4 Canal. Deliveries are made to maintain a control elevation of 5.1 feet NGVD unless deliveries are being made to the SDCS. The Tailwater elevation for this structure during deliveries to the SDCS is 4.5 feet NGVD.

Location: Dade-Broward Levee, Pennsuco Wetlands, WCA 3B, the Central Lake Belt Storage Area and Miami-Dade County's Northwest Wellfield.

Counties: Miami-Dade

Assumptions and related considerations:

- 1) Wellfield protection must be maintain through recharge of acceptable water quality.
- 2) Secondary structures within the recharge canals may be needed to provide seepage reduction and wellfield recharge desired.
- 3) The stage maintained in the Dade-Broward Levee conveyance canal is subject to change.
- 4) Telemetry systems are required for all operable structures and pump stations.

-Draft-
Water Preserve Area Feasibility Study – Tentative Selected Plan

Interim Operations (2010)

- 1) Wet season operations include using L-30 to send WCA 2B seepage to C-4, S-356 and then to SRS. Dry season water supply operations include using Miami Canal to convey water to the L-30 Canal (S-337), then to the L-31N Canal (S-335) to deliver water to South Dade Conveyance System.
- 2) The Dade-Broward Levee Canal will convey LOK deliveries to maintain the C-4/C-2 Canals. Includes control structure on the northern levee at the intersection of C-4. The Dade-Broward Levee and Canal will not be maintained at elevation 5.1' NGVD; structures will be opened to pass deliveries.

-Draft-
Water Preserve Area Feasibility Study – Tentative Selected Plan

Component T

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: C-4 Control Structure

Purpose: Proposed structure to reduce regional system water supply deliveries by diverting dry season stormwater flows to the C-2 Canal to increase recharge in several nearby coastal wellfields.

Operation: The structure diverts dry season stormwater flows from the western C-4 basin to the C-2 Canal to recharge the wellfields in the eastern C-2 basin.

Design and operation detail:

Control structure - An operable lift-gate with an overflow elevation of 4.5 feet NGVD and a capacity of approximately 600 cfs (final design specifications will be determined in future detailed design and hydrologic and hydraulic modeling).

Location: In the C-4 Canal, just downstream of the confluence of the C-2 and C-4 canals.

Assumptions and related considerations:






- 1) Benefits to WCA 3B associated with improved C-4 seepage control are directly related to the proposed G-356 pumpage (Modified Water Deliveries).
- 2) Head losses across the proposed structure do not inhibit passing flood releases when necessary.
- 3) A pump may be associated with the west C-4 structure if back pumping the C-4 basin runoff to the Bird Drive Recharge Area becomes a component of the final alternative.
- 4) Telemetry systems are required for all operable structures and pump stations

This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.

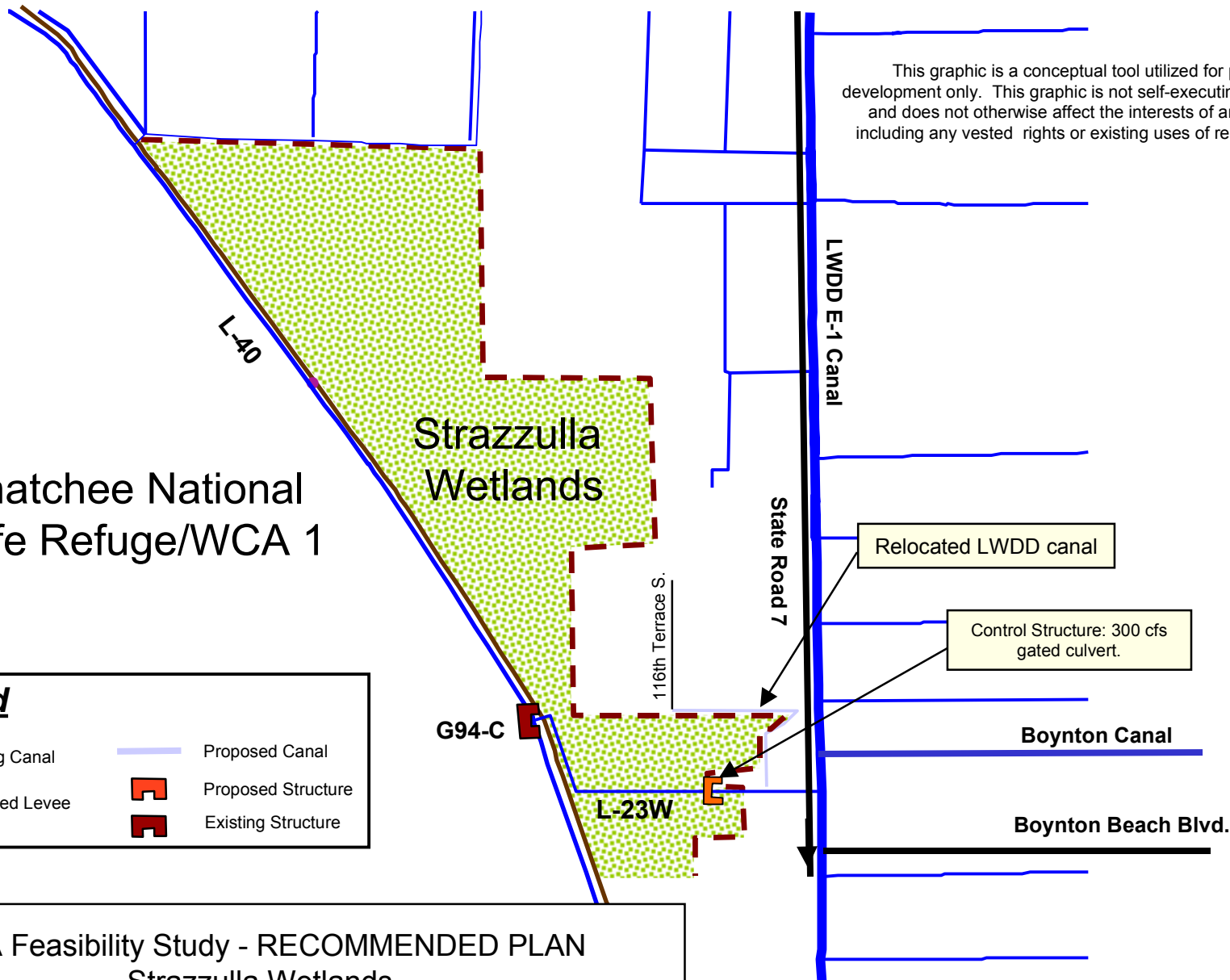
Loxahatchee National Wildlife Refuge/WCA 1

Strazzulla Wetlands

Legend

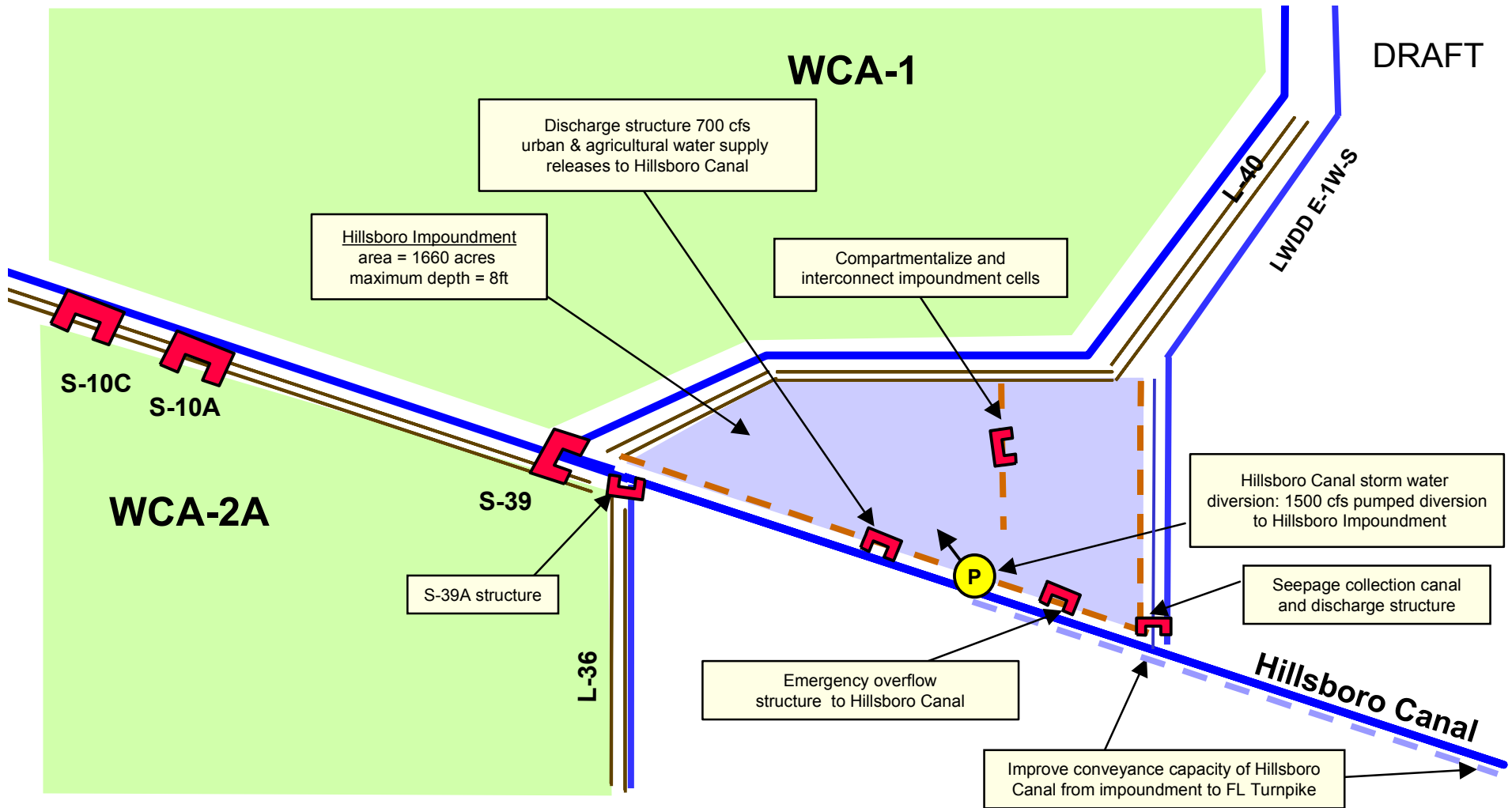
	Existing Canal		Proposed Canal
	Proposed Levee		Proposed Structure
			Existing Structure

WPA Feasibility Study - RECOMMENDED PLAN
Strazzulla Wetlands
WPA Component Map 2



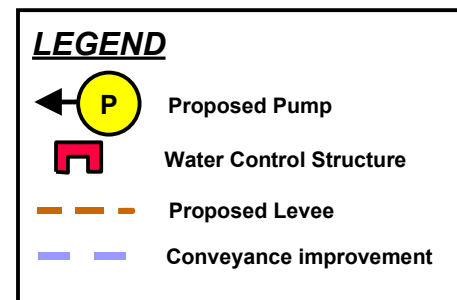
DRAFT

N
↑
Not to scale



WPA Feasibility Study - RECOMMENDED PLAN
Hillsboro Impoundment and ASR
WPA Component Map 3

This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.



N

↑

Not to Scale

This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.

DRAFT

WCA-2B

1500 cfs Structure to pass water supply deliveries from L-38 borrow canal to US 27 west borrow canal (improved to pass additional flows). Maintains separation of Lake Okeechobee deliveries and WCA 2 seepage water.

1500 cfs pump and culvert to convey flows generated by both seepage collection and flows above targets in WCA 2B from NNR to the L-37 borrow canal

New levee to be constructed from North New River south to the Miami Canal

**WPA Feasibility Study
RECOMMENDED PLAN
North New River
WPA Component Map 4**

L-38

S-34

I-75

US 27 west borrow canal

North New River

I-595

US 27

L-37 Borrow

LEGEND

Existing Canal

Existing Levee

Existing Water Control Structure

Improved Canal

New Levee

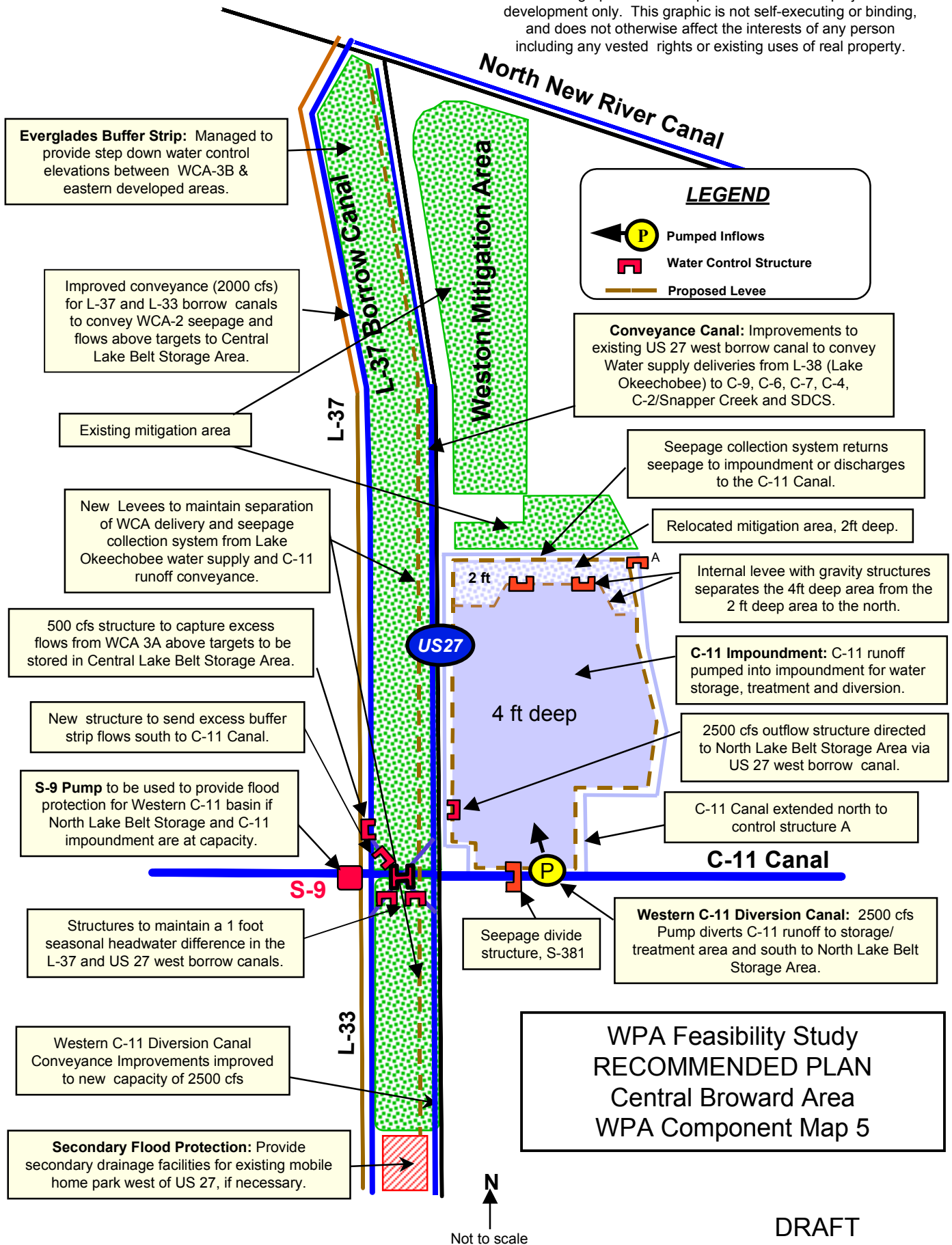
New Culvert

New Water Control Structure

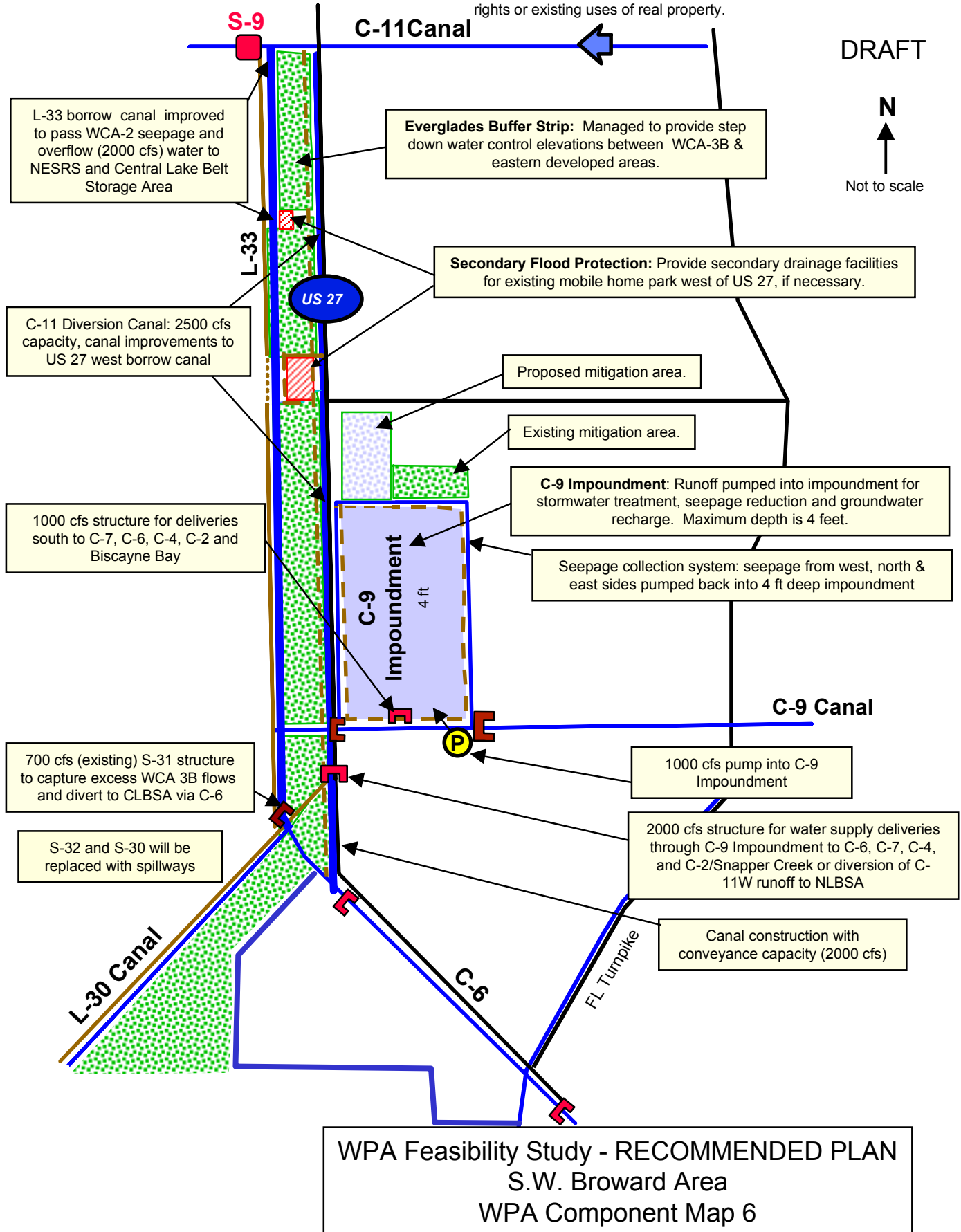


Not to Scale

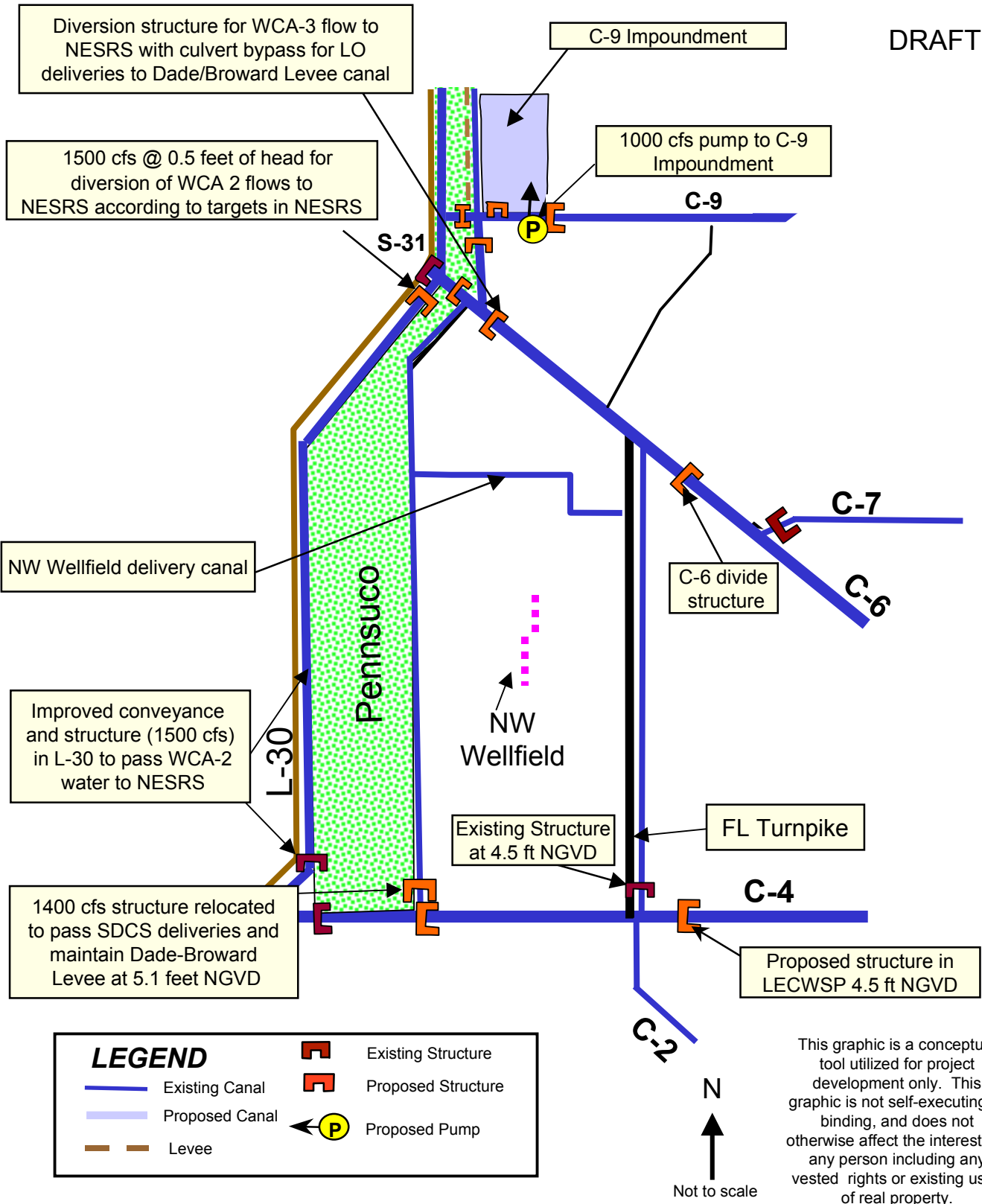
This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.



This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.



DRAFT



WPA Feasibility Study - RECOMMENDED PLAN
North and Central Lake Belt Storage Areas
WPA Component Map 7